



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ming T. Chen

Examiner: Stephen Blau

Serial Number: 10/656,819

Art Unit: 3711

Filed: September 5, 2003

Atty Docket No: 580-1-002

For: "Tri-Weight Correlated Set of Iron Type Golf Clubs"

SECOND AMENDMENT AFTER FINAL

Mail Stop AF
Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

Responsive to the Final Office Action dated February 15, 2005 and the Advisory Action dated June 9, 2005, applicant amends the application to cancel the rejected claims leaving only Claims 6, 7, and 10 indicated as allowable by the Examiner. In his Advisory Action dated June 9, 2005 in response to applicant's Amendment After Final dated May 16, 2005, the Examiner indicated that the "new list of claims and changes to the specification are agreed with and corrects the past deficiencies as commented on in the Office Action dated 15 February 2005 and such has been entered." Therefore, applicant's listing of claims which follows is based upon prior entry of the amendments as set forth in the Amendment After Final dated May 16, 2005.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop AF; Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450, on this 15th day of July, 2005.

Signed:  Dated: July 15, 2005
Robert R. Mallinckrodt

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Previously Presented) A tri weight correlated set of iron-type golf clubs with tri-weight mass having the same swing weight, wherein at least two clubs of the set, comprise:
 - a. a shaft with a handle,
 - b. a head having
 - i. a neck to attach to the shaft,
 - ii. a face with a hitting surface for impacting a golf ball,
 - iii. sides,
 - iv. a top,
 - v. a back surface behind the hitting surface,
 - vi. a bottom sole structured to align with the ground having a heel, and a toe,
 - vii. a first reinforcement sole weight system attached behind the back surface of the club along the bottom sole with its mass thickness structured such that
 1. the height (xy-direction) of its sole mass curvilinearly rises with short linear and/or curved segments from a low point proximate the heel, increases along the sole to a peak reinforcing the middle of the lower back surface of the club, and thereafter curvilinearly declines with short linear and/or curved segments to a low point proximate the toe of the bottom of the sole, and
 2. the depth (z-direction) of its sole mass curvilinearly rises with short linear and/or curved segments increasing in thickness from a least thickness proximate the heel and increasing along the bottom of the sole in depth to reinforce the middle of the lower back surface of the club behind the lower segment of the hitting surface and thereafter

decreasing in thickness with short linear and/or curved segments to a least thickness proximate the toe along the sole to add center weight with least mass proximate the toe and heel and increasing mass toward the center of the club to move back and lower the center of gravity from the club face to increase the moment of inertia of the club and reduce twisting caused by off-center hits while adding distance to well hit center shots,

- viii. a second periphery balancing weight system placed along the top and sides of the back surface of the club head structured to contact the sole weight, thereby defining a cavity in said back surface, said periphery balancing weight structure having least weight and thickness starting at the top of the back surface and gradually increasing in weight and thickness toward the sole of the club to lower the center of gravity of the club and provide better balance and strength behind the periphery of the hitting surface of the face of the club to assist in resisting twisting of the club when contacted by an off-center hit to aid in maintaining shot alignment, and
- ix. a third center weight system attached to the back surface behind the hitting surface above the sole weight with structure to reinforce the upper segment of the hitting surface above the sole weight and add distance to off-center higher hits.

7. (Previously Presented) A tri-weight correlated set of iron-type golf clubs according to Claim 6, wherein the height of the center weights extend to greater heights depending on the iron number.

8. (Canceled)

9. (Canceled)

10. (Previously Presented) A tri-weight correlated set of iron-type golf clubs according to claim 6, wherein the periphery balancing weight structure along the back of the toe defines a first rounded depression leading into the back cavity.